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ABSTRACT

Sixty-two socioculturally homogeneous, low-income black mother/child pairs were tested and observed when the infants were 2, 6, 12, 18, 24, 30, and 36 months of age to determine the relationship between variability in parenting attitudes, skills, and behaviors and consequent variability in children's intellectual development. As expected, the children varied enormously in their 36-month cognitive test performance. Results confirm findings of other longitudinal studies showing that mother/child interaction in the early years is related to the child's intellectual development by age 3 years, especially responsiveness and sensitivity in the first 18 months, followed by skilled maternal verbal interaction and a generally non-hostile maternal approach from 18 to 36 months. Some psychological antecedents of mothers' interaction behavior were identified, such as the mother's self-esteem and her recall of her own mother's parenting style, especially rejection and control. Relationships, while apparently robust within the group, were susceptible to change. The project from which the sample was drawn was a parent education project that was very successful in enhancing mothers' interaction with their children. Program effects overrode initial differences in self-esteem and other related attitude variables for mothers participating in the program. (RH)

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MOTHER-CHILD INTERACTION AND CHILD COGNITIVE DEVELOPMENT IN LOW-INCOME BLACK CHILDREN: A LONGITUDINAL STUDY[1]

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Today I'm going to discuss linkages seen over three years between mother-child interaction and child intellectual development within a group of low-income Black families. The issue of the relationship between environment and the child's intellectual development, of interest to social scientists at many different times in the past, took on renewed social, political, and psychological significance in the 1960's with the recognition that low income children did not perform in the same way on standardized tests of intellectual ability as did middle class children. Two decades of research followed which explored links between early environment, especially the mother-child relationship, and the child's cognitive development. At first cross-sectional, an increasing number of longitudinal studies have been reported.

These studies differ in ages of the children, observation and outcome measures used, ethnicity and social class of the samples, and length of time the samples were followed. Nonetheless, the results have converged into a body of longitudinal research which demonstrates that mother-child interaction, especially from birth to 24 months, is in fact a strong determinant of the child's intellectual abilities as measured from 24-60 months (Bee, 1982; Bradley & Caldwell, 1976a, 1976b, 1981; Bradley, Caldwell & Elardo, 1979; Carew, 1980; Clarke-Stewart, 1973, 1979; Coates & Lewis, 1984; Cohen & Beckwith, 1979; Gottfried, 1984; Ramey, Farran & Campbell,

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1979; Ramey, Yeates & Short, 1984; Farran & Ramey, 1980; Slaughter, 1983). Specifically, mothers who are more affectionate, responsive, stimulating, participatory, and verbal in the child's first two years, consistently seem to have children who perform better on traditional tests of intellectual and language abilities between ages 24 and 60 months.

Ironically, while the low income Black child was the stimulus for much of the original interest in the effects of maternal interaction styles, very few studies, either cross-sectional or longitudinal, have focused on the low income Black child per se. Rather, the focus has most often been on comparative research--comparisons with white low income children, with middle class children and mothers, or with matched groups of Black children and mothers receiving an educational treatment or intervention program. With few notable exceptions (Slaughter, 1983, for example) many of the studies seemed to contain an implicit assumption of homogeneity among low income Black families (Harrison, Serafica & McAdoo, 1984).

It is clear that Black families in this country have traditionally faced a set of common obstacles: historical, economic, political, social, and psychological barriers to education, full employment, and upward mobility. These common obstacles reasonably have some common consequences for families. However, it is also reasonable to assume that there would be variability in how individuals cope and develop despite externally similar circumstances (Brofenbrenner, 1979; Clark, 1983; Slaughter, 1983).

Specifically, it was hypothesized that within the present sample of low income Black families, there would be variability in parenting attitudes, skills, and behaviors, with consequent variability in the children's intellectual development. Furthermore, it was hoped that eliminating status variables such as class and race would encourage a more process-oriented interpretation of whatever parent-child linkages were found.

Methods

Sixty two low-income black mother-child pairs, whom we had followed from birth to age three years, were selected for the present study. They comprised a portion of the control group of the New Orleans Parent Child

Development Center (PCDC) parent education project (Andrews, Blumenthal, et al., 1982). These particular control group members were selected for the current paper because they had the most complete data for the three year period under study.

These mothers had been initially recruited for the PCDC project from birth records from the local public hospital shortly after their children's birth, and randomly assigned to the control or program group. Before recruitment, the birth records had been screened to ensure that the children in both the program and control groups would be as biologically intact as possible. The mothers had to have been 18 or older when the target child was born, the mothers had to have had normal labors and deliveries. The target children had to have been of normal birthweight and had normal Apgar scores. The target infants also had to have been free of apparent physical or developmental problems at age two months when the study began. Further, the mothers had to have lived within a selected geographic target area of the city, and had to have fallen below certain income guidelines.

Because of these stringent selection criteria, the 62 control group mother-child pairs I am reporting on today comprise a quite homogeneous sociocultural sample. To give you some idea of their demographics (Table 1): the average maternal education for the group was 11th grade; the mothers' average age when the target child was born was 23, and the average number of children she had, including the target child, was 2.5. Thirty percent of the mothers lived in public housing; 53% received Aid to Families with Dependent Children. The father was present in 40% of households. On average, there were five people living in each target household, including the mother.

As members of the control group, these 62 mother-child pairs were tested and observed at the beginning of the study at their child's age two months, and after that every six months, for a total of seven testing time points: ages 2, 6, 12, 18, 24, 30, and 36 months. Testing took place at the PCDC Research Center, located adjacent to a public housing project within the target geographic area. Testers and interviewers were non-professional black women from the community who had been intensively trained in testing and interview procedures.

Three kinds of measures were used with these mothers and children: 1) videotaped observations of mother-child interaction; 2) tests of the child's cognitive development; 3) background and attitude questionnaires for the mother.

The children's test battery, given at all the testing points, included both traditional and non-traditional, and standardized and non-standardized tests. For example, the Uzgiris-Hunt Infant Scales (Uzgiris & Hunt, 1975) the Bayley Scales (Bayley, 1960), the Pacific Abstract Abilities Test Series (Shapiro, 1970), the Palmer Concept Familiarity Index (Palmer, 1970), the Purdue Self-Concept Test (Cicirelli, 1975), and the much maligned but familiar Stanford Binet IQ test.

Mothers received standard demographic interviews (income, education, age, presence or absence of the child's father in the household, welfare status, whether or not the family lived in public housing, total number of people in the household), and an abbreviated version of the Wechsler Adult Intelligence Scale (WAIS), plus some less traditional attitude measures including a questionnaire adapted from Rotter measuring the mother's sense of control over her environment and her feelings of esteem about herself (Blumenthal, 1975), and the Schaefer Parent Behavior Inventory (Schaefer, 1965), which asked about the mothers' feelings and memories about her own mother's child-rearing practices.

Finally, at each of the testing visits we videotaped interaction between the mother and the child in an unstructured waiting room situation for 6 minutes.

Results

Turning to our results (Table 2), we found that, as we expected, the 62 control group children varied enormously in their 36 month cognitive test performance. For example, Stanford Binet test scores (these are 1960 norms) at 36 months ranged from a high of 128 to a low of 71; the mean Binet score was 96.

Looking at earlier test scores for these children, we saw a pattern of development that is familiar in low income samples when we look at average scores: at 6 months, on the Bayley mental scale, for example, our

sample score was above average; by 18 months our sample mean was below average.

The major focus for our subsequent analyses was to look for predictors which would help differentiate the children who remained high scorers at 36 months, from those who began a downward turn.

Since the 62 mothers were so homogeneous, we did not expect any of the 36-month child differences to be due to simple socioeconomic differences, but we checked this out anyway. As expected, we did not find any strong or direct relationships between traditional maternal background characteristics such as income, father presence, welfare status, etc., and child outcomes at 36 months.

Next, we looked at infant test scores to see if there was any significant early predictability from these regarding which children would score higher on the 36 month test battery; but there was not.

That left mother-child interaction. Were there earlier mother-child interaction differences which related to the children's 36 month test scores?

Before giving you the results of the mother-child analyses, I will briefly describe our interaction measures. Mothers and children were asked to interact as normally as possible in a room filled with a toy shelf, a book shelf, and several comfortable chairs. There was a two-way mirror in the room; although mothers knew they were being taped, it seemed less intrusive to have all the machinery out of sight. Interaction was observed at 2, 6, 12, 18, 24, 30, and 36 months.

We scored the videotapes in two different ways. The first kind of score was a frequency score of 33 different discrete maternal behaviors, coded as being present or absent every 15 seconds. Some examples of these 33 maternal variables are: holding, vocalizing, verbal stimulation, mutual play, labeling, giving information, focusing, suggesting, commanding, restricting, physical punishment, threats, hostility, criticism, encouragement, and so on--basically, we tried to measure all those discrete maternal behaviors that prior research had found to be important for the child's development.

The second kind of maternal scores we used were overall global ratings of the entire interaction. We used four such ratings, which we adapted from Ainsworth (1971): Insensitivity-Sensitivity (IS), Rejection-Acceptance (RA), Interference-Cooperation (IC), and Responsiveness-Ignoring (Respv).

As you can tell, this gave us an enormous amount of mother-child interaction data--33 discrete behaviors measured every 15 seconds for 6 minutes at 7 time points, plus 4 global ratings at each time point. We reduced this data to more manageable proportions, through use of correlation matrices, factor analyses, and a priori theoretical groupings. Although it may have oversimplified the outcomes a little, we found it useful to create one "super variable" of good mothering (GM) for each time point which summarized all the positive discrete maternal behaviors which had been observed at that time point. Basically, this discrete behavior summary score weighted and summed all the positive discrete maternal variables which had loaded together, were theoretically consistent, and/or intercorrelated, and subtracted from this the sum of all the negative discrete maternal variables which had loaded together, and were theoretically consistent or correlated.

OK--so what did we end up with? We ended up with 5 scores for each of 7 time points--4 global ratings, and one discrete behavior summary score, or a total of 35 maternal scores.

Having given you some background about the mother-child interaction variables, we can now look at the relationships that we found between these variables, and the child's 36 month test scores.

For each of our 7 time points, the 4 global ratings plus the discrete behavior summary score were entered into a stepwise multiple regression analysis, with the 36 month Stanford Binet score as the dependent variable (let me say we have also used a combination score of all of the 36 month cognitive child tests outcome as the dependent variable; the results were much the same). For today, I will keep matters simple and just discuss the single Binet test score as the dependent variable (Table 3).

We found that, indeed, looking at mother-child interaction scores did give us some help in predicting which children would be high scorers on the 36 month

Binet. At all time points, maternal interaction was significantly related to the 36 month test score. However, these results were strongest for the 2-18 months time period, with multiple r's beyond .60 accounting for an average 44% of the variance (r^2) of the child's 36 month score. Between 24 and 36 months, the strength of the relationship between the interaction scores and the 36 month test performance scores, while still significant, dropped somewhat.

The general finding of early maternal interaction relationships with later child development is consistent with both theory and findings from other longitudinal studies. In addition, we had expected that earlier mother-child interaction variables would be more related to the 36 month child test performance scores than contemporaneous mother-child interaction, because we had thought there would be a lag between the children's experience of the maternal environment, and the results of that experience in the child's development. Nonetheless, we were surprised at the strength of the correlations at some of the very early ages, for example, r^2, or percentage of 36 month child test score accounted for by the 2 month interaction variables, was 52% (multiple r was over .70).

There also were differences between each time point regarding the maternal variables most strongly related to 36 month child outcomes. During the first 18 months, the global ratings, especially responsiveness and sensitivity, tended to have the strongest relationship within the 36 month child test scores. With children aged 24 to 36 months, the discrete behavior summary score, a variable heavily loaded with maternal verbal behaviors, and the global rating acceptance-rejection, tended to play a greater role in the 36 month child test scores. Finally (not shown), maternal interaction scores were remarkably consistent over time. Particularly, mothers who seemed highly unresponsive and insensitive, and who did not show adequate coping with their infants, did not suddenly become good mothers at age 36 mothers, although there were some mothers who showed somewhat positive interaction scores at 2 months who began to show less adequate coping behaviors as their children got older.

To be more specific about what our mothers were doing: children who were higher scorers on the Stanford Binet at 36 months had mothers who, especially at earlier

ages, were more responsive and sensitive, and who also showed a wide range of specific behaviors which indicated age-appropriate involvement with the child, such as holding, mutual play, vocalization, verbal elaboration, use of skilled verbal control and teaching. Mothers whose children performed well at 36 months spent less of their observed interaction time being neutral or negative; they spent less time on routine care, used less physical restriction and control, showed less hostility and criticism, and rarely ignored the child during the brief observation period.

Because the early mother-child interaction variables were so strongly related to the child's later development, we wondered if there would also be any relationships between the mother-child interaction variables and the earlier child tests. However, there were almost no relationships between the mothers' early interaction behavior, and the infants' early test performance scores.

Our findings suggested to us, as McCall (1981) and others have proposed, that the early months of the child's development may reflect a level of intactness of functioning that is separate from the sociocultural environment. However, the early environment, as represented by the mothers' interactions, may nonetheless be having a silent, cumulative effect which we begin to see later as the children become more differentiated in their development, particularly as verbal and conceptual abilities take on more importance. It is striking that, although the effect is not immediate, the maternal attitudes, predispositions, and behavioral patterns which will affect the child's later cognitive functioning are already present at age 2 months. These results are consistent with findings from several other longitudinal studies (Coates & Lewis, 1984; Bee et al., 1982; Cohen & Beckwith, 1979) regarding the strength of very early maternal interaction behaviors in predicting later intellectual performance.

The next logical question was what are some of the factors in these mothers' lives which determined how they parented their children? Unfortunately, because the PCDC project was set up to test primarily mother and child interaction and child outcomes, the amount of information we had about the mothers was not as rich and detailed as we would have liked. Nonetheless, we found some very interesting and suggestive relationships, and I will end

this presentation with a brief discussion of some of our findings about our mothers.

As you will recall, in addition to the usual demographic measures, we had for each mother an abbreviated verbal intelligence (WAIS) score, a measure of the mother's self-esteem, and an interview which asked the mother to recall her own mother's child-rearing practices.

We first looked to see if any of our maternal background, IQ, or attitude variables had a direct effect on child's 36 month test performance, over and above what the maternal interaction scores predicted. We carried out a series of stepwise multiple regressions, using as the dependent variables the Stanford Binet 36 month IQ score, and as the independent variables maternal interaction and maternal background, IQ, and attitude scores. None of these additional maternal data added to the strength of the relationship between mother-child interaction and the 36 month child score.

This is consistent with similar studies which have looked at maternal interaction and maternal background characteristics in relationship to child performance, and which have found that, rather than acting directly on the child, these maternal background variables are moderated via the mother, shaping her interaction behaviors to the child (for example, Hess & Shipman, 1965; Hess, 1984).

Our next step was to formulate another series of stepwise multiple regression equations, to look at the role of maternal background variables in relationship to the mother-child interaction variables. For each interaction time point, two equations were set up, using as the dependent variable in the first equation, the discrete behavior summary score. For the second equation at each time point, the dependent variable was the maternal global rating which had been most strongly related to the Stanford Binet. The independent variables, or predictors, were the maternal background measures. For each multiple regression equation, 12 predictor variables were available for entry: mother's education (MED), income, age, number of children, welfare status, housing status, number of people in the household, WAIS score, Parent Behavior Inventory rejection/control score (PBI/RC), Parent Behavior Inventory hostility score (PBI/H), and Maternal Self-esteem Score (MSE). Only the top 5 variables were allowed to enter the equation, and

only variables which significantly added to the predictability of the equation, and/or which were part of a significant overall F, are reported on Table 4.

The results (Table 4) showed that most of the traditionally predictive demographic variables, such as income, welfare status, presence of father, etc., were not significant predictors of the mother's interaction with her child; in fact, these never entered the equations. Rather, the maternal attitude measures of self-esteem, and recollections of her mother's style of rejection/control, accounted for most significant portions of the variance in maternal interaction variables. The relationships were not entirely straightforward, however, but rather showed a somewhat complex pattern of interrelationships between maternal attitudes, education, WAIS scores, number of children, the kind of interaction variable used (e.g., global or discrete) as the dependent measure, and the age of the child at the time of the interaction observation.

In the first 12 months, four maternal background variables consistently predicted maternal interaction: the mother's memory of her mother's use of rejection and control; the mother's self-esteem and sense of control over her environment, her WAIS score, and the number of children she had. Surprisingly, contrary to studies in middle class families, in this sample number of other children is positively related to maternal interaction--that is, being a first child here is a disadvantage. This runs contrary to the conventional wisdom that the more children a low income mother has, the worse the maternal environment will be for these children. However, we should remember that the average number of children for the sample was just 2.2. In addition, it is usually assumed that when the new baby comes, the mother will spend more time with the infant than with the older child, at ages 2-12 months our sample children would be at the age to receive this extra interaction. Indeed, number of children drops out as an important variable after age 12 months.

From 18-36 months, the mothers' self-esteem and remembrance of her own mother's use of rejection and control continues to be significant in predicting maternal interaction behavior, especially at the discrete behavioral level; in addition, maternal educational background begins to be a part of the prediction equation, as does the mother's memory of her own mother's use of hostility.

To summarize all this, I'll try to create some pictures of what we found. The mother who will not be adequately supportive of her child's development is apt to be an inexperienced mother who, when her child is born, has low self-esteem and a sense that she has little control over her life; these attitudes are then manifested in interactions with her young infant which are characterized by some insensitivity and nonresponsiveness. Particularly if this mother has memories of her own mother as rejecting and controlling, if she is less well educated, and has lower verbal intelligence, as her child gets older this mother will become more and more unable to cope successfully, and her problems will be manifest in her interaction behavior with her child which will be characterized by the use of lots of ineffective behavior with her child which will be characterized by the use of lots of ineffective control strategies and little positive verbal teaching or mutually enjoyable play. Her child's intellectual development by age 36 months will probably be below average.

At the other end of the spectrum we have the adequately coping mother. Even though she is poor, and may be a single parent, possibly living in public housing or is even on welfare, she nonetheless has been able to provide a more nurturing environment for her young child. She may have already had one child. She has a better sense of self-esteem, remembers her own childhood more positively, is slightly better educated, and has a slightly higher score on a verbal intelligence battery. Her child's intellectual development by age 36 months will probably be above average.

Discussion

There are several conclusions we can draw from this study. First, we have illustrated some of the complex dynamics of behavior and development within a group that the literature has so often treated as predictably uniform.

Second, we have reconfirmed other longitudinal studies that have shown that mother-child interaction in the early years is related to the child's intellectual development by age 3, especially responsiveness and sensitivity in the first 18 months, followed by skilled maternal verbal interaction and a generally non-hostile

maternal approach from 18-36 months. I think some of the statistical relationships in our group between maternal interaction and child cognitive outcome were so high because our group was so homogeneous--that is, we had eliminated many sources of extraneous variability.

Third, we found that some psychological antecedents of the mothers' interaction behavior can be identified, such as the mother's self-esteem and her recall of her own mother's parenting style, especially rejection and control.

Fourth, it is important to consider that the kinds of relationships we found in our sample, while apparently robust within the group, are at the same time susceptible to change from the outside. For example, the project from which this sample was drawn was a parent education project, and was very successful in enhancing program mothers' interaction with their children beyond the level of the control group mothers; program effects overrode initial differences in self-esteem and other related attitude variables for program mothers (Bridgeman, Blumenthal et al., 1981; Andrews, Blumenthal et al., 1982).

The important questions about our more adequately coping control group mothers are whether or not their initial strengths will hold up as they continue to live in a relatively difficult environment, and second, whether these maternal strengths will be adequate for supporting their children's continued development as their children get older, and enter more complex and demanding situations such as school. We are in the process of planning some of this follow-up now.

Table 1

Maternal Background Characteristics

Variable	Mean	Standard Deviation	Range
Demographic Scores:			
Adjusted per capita income	$650	$436	$68-2,082
Maternal education (grade)	11.1	1.9	5-16
Maternal age (years)	23.7	4.8	16-35
No. children (including target)	2.48	1.2	1-5
Father present	43% yes	-	yes/no
Welfare	53% yes	-	yes/no
No. people in household	5.4	2.3	3-13
Public housing	31% yes	-	yes/no
Other Material Background Information:			
WAIS (3 subscales-average score)	12.2	6.4	1-24
Maternal self-esteem	45.4	8.0	28-59
PBI Scores			
Rejection/Control	6.6	4.0	0-15
Hostility	3.4	.65	0-16

Table 2

Child Test Scores--Means and Ranges

Age	Test	Mean	Range
6 mos.	Bayley Mental	120	81-150
12 mos.	Bayley Mental	106	62-133
18 mos.	Bayley Mental	98	64-122
24 mos.	Bayley Mental	90	62-152
6 mos.	Bayley Motor	110	77-144
12 mos.	Bayley Motor	111	60-141
18 mos.	Bayley Motor	104	66-147
24 mos.	Bayley Motor	101	64-150
36 mos.	Stanford Binet	97	71-128*

*1960 norms.

Table 3

Stepwise Regression Statistics for Mother-Child Interaction Variables Predicting 36 Month Stanford Binet IQ Scores

Child's Age	Predictor	R	R^2	F(df)[a]	F(df)[b,c]
2 mos.	Respv	.57	.33	15.7**	18.4 (1,38)**
	GM	.67	.47	8.5**	15.3 (2,37)**
	IS	.72	.52	2.7	11.6 (3,31)**
6 mos.	IS	.47	.22	32.1**	12.1 (1,42)**
	IC	.65	.42	8.1**	14.9 (2,41)**
	RA	.67	.45	2.4	11.1 (3,40)**
12 mos.	GM	.49	.24	6.0*	14.8 (1,46)**
	IS	.53	.28	8.3**	8.6 (2,45)**
	IC	.58	.34	3.3*	7.6 (3,44)**
	RA	.62	.39	3.1*	6.8 (4,43)**
18 mos.	Respv	.64	.40	2.7	24.7 (1,37)**
	RA	.65	.43	1.8	13.5 (2,36)**
24 mos.	GM	.52	.26	5.1*	14.9 (1,42)**
	RA	.55	.30	2.8	8.9 (2,41)**
30 mos.	GM	.37	.14	5.2*	6.1 (1,38)*
	RA	.46	.21	7.1*	4.8 (2,37)*
	Respv	.53	.28	3.6*	4.7 (3,36)**
36 mos.	GM	.52	.26	7.6**	14.2 (1,40)**
	IC	.53	.28	1.9	7.9 (2,39)**

* $p < .05$
** $p < .01$

[a]Significance level for F ratio for each variable in the equation
[b]Significance level for F ratio for the regression coefficient after the last step
[c]About 10 mother-child pairs randomly missed each videotaping time. Of the total of 62 pairs, no pair missed more than 2 times.

Table 4

Stepwise Regression Statistics for Maternal Background Variables Predicting Global and Discrete Mother-Child Interaction Scores

	Criteria: Global Score				Criteria: Discrete Behavior Summary Score			
Child's Age	Predictor	R	R^{2a}	F^b(df)	Predictor	R	R^{2a}	F^b(df)[c]
2 mos.	NCH	.32	.11*	3.0 (1,26)	PBI/RC	.33	.11*	3.4 (1,27)
	WAIS	.54	.29*	5.1* (2,25)	MSE	.54	.29*	5.2*(2,25)
	PBI/H	.55	.31	3.5* (3,24)				
	PBI/RC	.60	.33	3.2* (4,23)				
6 mos.	MSE	.36	.13*	4.19*(1,28)	MSE	.48	.23*	8.0**(1,27)
	NCH	.44	.19	3.23 (2,27)	PBI/RC	.58	.34**	6.8*(2,26)
12 mos.	WAIS	.30	.09*	3.0 (1,30)	WAIS	.33	.11*	3.5 (1,30)
	PBI/RC	.44	.20*	3.6**(2,29)	PBI/RC	.45	.21*	3.8*(2,29)
					NCH	.52	.27*	3.5*(3,28)
18 mos.	PBI/RC	.35	.12*	3.7 (1,27)	PBI/RC	.38	.14*	4.4*(1,27)
	MSE	.42	.11*	2.8 (2,26)	MSE	.47	.22*	3.8*(2,26)
	WAIS	.51	.25	2.8+ (3,25)				
24 mos.	WAIS	.39	.15*	4.6* (1,26)	MSE	.46	.21**	6.9 (1,26)
	MSE	.46	.21*	3.3 (2,25)	PBI/RC	.61	.37**	7.4**(2,25)
	MED	.53	.28	3.1* (3,24)				
30 mos.	PBIH	.27	.07	2.1 (1,25)	PBIH	.30	.09	2.5 (1,26)
	MSE	.32	.10	1.5 (2,25)	MED	.43	.18	2.8 (2,25)
36 mos.	PBIH	.27	.07	2.2 (1,27)	PBI/RC	.30	.09*	2.7 (1,27)
	MED	.36	.13	2.0 (1,26)	MED	.39	.15*	2.3 (2,26)
					MSE	.52	.27*	3.1*(3,25)

* $p < .05$
** $p < .01$
\+ $p < .10$

[a] Significance level for F ratio for each variable in the equation

[b] Significance level for F ratio for the regression coefficient after the last step

[c] Number of mothers in these analyses are smaller than the total sample of 62; the PBI and MSE measures were pilot measures given to a random subsample.

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